



**CONESTOGA-ROVERS
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MEMORANDUM

To: Steve Renninger, USEPA
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REF. No.: 038443-62-03

FROM: Adam Loney/Valerie Chan, CRA/cb/24

DATE: July 10, 2014

RE: **B&G Trucking, Building 9, 1951 Dryden Road**

Conestoga-Rovers & Associates (CRA) has prepared this memorandum to document the available data for benzene concentrations in indoor air (IA) and sub-slab (SS) soil vapor at B&G Trucking Building 9, located at 1951 Dryden Road. CRA prepared this memorandum in response to a request from the United States Environmental Protection Agency (USEPA) during the conference calls held on April 24, 2014 and June 19, 2014, to discuss the status of vapor intrusion mitigation activities for the South Dayton Dump and Landfill Site (Site). CRA is submitting this memorandum on behalf of the Respondents to the Administrative Settlement Agreement and Order on Consent (ASAOC) for Remedial Investigation/Feasibility Study (RI/FS), Docket No. V-W-06-C-852 and the ASAOC for Removal Action, Docket No. V-W-13-C-10 (Respondents).

The USEPA requested the summary of benzene and xylenes data for Building 9, following the detection of benzene and xylenes in indoor air samples at concentrations greater than the Ohio Department of Health (ODH) screening levels of 2 and 200 parts per billion (ppb), respectively. The sub-slab depressurization system (SSDS) commenced operation on September 30, 2013. All sub-slab sample concentrations of benzene and xylenes have been well below the ODH SS screening levels of 20 and 2,000 ppb, respectively. A summary of the analytical results including sampling dates and locations is provided in Table 1.

Table 1 Building 9 (B&G Trucking) Concentrations (ppb)

<i>Parameter</i>	<i>Location</i>	<i>January 2012</i>	<i>March 2012</i>	<i>October 2013</i>	<i>March 2014</i>	<i>May 2014</i>	<i>ODH Screening Level</i>	<i>ODH Action Level</i>
Benzene	IA-9-A	--	17 U	5.3 U	17 J	--	2	20
	IA-9-B	--	48 U	14 U	8.1	0.15 J		
	IA-9-E	--	--	--	--	0.17 J		
	SS-9-A	1.8 U	9.2 U	--	--	--	20	200
	SS-9-B	1.4 U	12 U	--	--	0.056 U		
	SS-9-E	--	--	--	--	0.45 U		

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Table 1 Building 9 (B&G Trucking) Concentrations (ppb)

<i>Parameter</i>	<i>Location</i>	<i>January 2012</i>	<i>March 2012</i>	<i>October 2013</i>	<i>March 2014</i>	<i>May 2014</i>	<i>ODH Screening Level</i>	<i>ODH Action Level</i>
m&p-Xylenes	IA-9-A	--	1,200	180	470	--	200	2,000
	IA-9-B	--	420	160	310	1.8		
	IA-9-E	--	--	--	--	13		
	SS-9-A	48 U	20 U	--	--	--	2,000	20,000
	SS-9-B	92	76	--	--	9.2		
	SS-9-E	--	--	--	--	8.9		
TCE	IA-9-A	--	13 J	3.4 U	5.0 U	--	2	20
	IA-9-B	--	31 U	8.7 U	0.65 U	0.036 U		
	IA-9-E	--	--	--	--	0.036 U		
	SS-9-A	1800/1800	3100	--	--	--	20	200
	SS-9-B	2.2 U	15 U	--	--	1.3		
	SS-9-E	--	--	--	--	150		

Notes:

U – Non-detect at the associated value

Bolded Values exceed the ODH screening level

CRA completed a physical building survey of Building 9 in January 2011. Building 9 is a single-story, commercial-use, cinder block, slab-on-grade building consisting of an open lobby/reception-type area (used for storage), unused office space, and a room used for paint storage in the front, and a body shop/heavy truck repair area in the rear, constructed prior to 1968. The building footprint is 5,000 square feet (ft²). The building is not insulated and doors are kept open in warm weather. The building floor is dry, and contains some cracking. A large drain, believed to drain to the sanitary sewer, is present in the middle of the floor. The foundation walls are unsealed. Exterior openings include vents, utility pipe penetrations, windows, and personnel and bay doors. Building 9 contains a hot air circulation gas furnace, but does not have any air conditioners.

On February 16, 2012, a representative of CRA completed an indoor air building assessment of Building 9. CRA observed a number of factors that may influence indoor air quality and contribute to concentrations of benzene and xylenes within the building. These factors included, but are not limited to, (i) personnel smoking tobacco products within the building; (ii) storage of petroleum-powered machines and/or vehicles inside the building; (iii) use of paints, solvents, lacquers, hardeners, thinners, drying agents, degreasers, and oils in the building.

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Vapor intrusion (VI) sampling conducted at Building 9 in January and March of 2012 at sampling points SS-9-A and SS-9-B showed benzene concentrations in IA and SS were less than the ODH screening levels. The March 2012 IA concentrations of xylenes were greater than the ODH screening levels; however, the SS concentrations of xylenes were less than the ODH screening levels. This indicates the xylenes concentrations in IA were not a result of vapor intrusion from sub-slab soil vapor into building 9, as the concentrations in the IA were greater than those in the sub-slab soil vapor. CRA notes that xylenes are a common solvent in paints.

CRA completed installation and commenced operation of the Building 9 SSDS on September 30, 2013. A summary of vacuum readings from Building 9 is provided in Table 2. Vacuum readings at all sub-slab probes were greater than the acceptable limit of -0.004 inches of water column ("w.c.") in the two monitoring events conducted after the installation of the SSDS. Extraction probes EP-1 and EP-2 had post-SSDS vacuum readings of -3" w.c. and -3.75" w.c., respectively, which are within the range of vacuums specified in the VI Work Plan (CRA, May 2013).

Table 2 Building 9 (B&G Trucking) Vacuum Readings (inches water column)			
Sample Location	10/11/2013	9/30/2013	07/25/2013
SS-9-A	-0.01404	Inaccessible	--
SS-9-B	-0.1197	-0.1140	--
SS-9-C	-0.0678	-0.0689	0
SS-9-D	-0.0049	-0.0047	-0.010
SS-9-E	-0.0166	-0.016	-0.031
EP-1	-3	--	--
EP-2	-3.75	--	--

Post-SSDS proficiency sampling completed in October 2013 showed that benzene and xylenes concentrations in indoor air samples were below the ODH screening levels. Continued operation of the SSDS should keep sub-slab concentrations below the ODH screening levels. However, the March 2014 IA benzene and xylenes concentrations were greater than ODH screening levels, indicating that a source within the building is likely causing or contributing to the indoor air concentrations. Prior to the March 2014 proficiency sampling event, all IA and SS benzene results were consistently non-detect and less than the ODH screening levels for benzene. SS concentrations of xylenes have been consistently less than the ODH screening levels for xylenes and less than the IA concentrations of xylenes. VI sampling conducted at Building 9 in May 2014 at sampling points SS-9-B and SS-9-E confirmed benzene and xylene concentrations in IA and SS were less than ODH screening levels. Sub-slab concentrations of TCE at compliance point SS-9-E was greater than the ODH screening level; however, IA TCE concentrations were less than the ODH screening level, which indicates that the VI pathway is not complete. The available evidence suggests that IA benzene and xylenes concentrations detected during VI sampling in March 2012 and during the 180-day proficiency sampling in March 2014 are a result of ongoing daily human activities within and around Building 9, and are not the result of a complete VI pathway.

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Based on the preceding information, the VI pathway has been eliminated and the Respondents recommend the next step for Building 9 to be 1-year indoor air proficiency sampling, anticipated to occur in September 2014.